

## Data Validation Checklist Semivolatile Organic Analyses

Project: 35<sup>TH</sup> Avenue Superfund Site  
 Laboratory: TestAmerica – Tampa, FL  
 Method: SW-846 8270C Low-Level (PAH)  
 Matrix: Soil  
 Reviewer: Jane Lindsey  
 Concurrence<sup>1</sup>: Carol Lovett and Martha Meyers-Lee

Project No: 15268508.20000  
 Job ID.: 680-87545-5  
 Associated Samples: Refer to **Attachment A** (Sample Summary)  
 Date(s) Collected: 02/15/2013  
 Date: 03/06/2013  
 Date: 03/28/2013

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
1. Were sample storage and preservation requirements met? If temperature >6°C, then J/UJ-flag results.	✓				
2. Were all COC records signed and integrity seals intact, indicating that COC was maintained for all samples?	✓				
3. Were there any problems noted in laboratory data package concerning condition of samples upon receipt?		✓			
4. Do any soil samples contain more than 50% water? If yes, then results are to be reported on a wet-weight basis.		✓			
5. Were holding times met (≤7 and 14 days from collection to extraction for aqueous and solid samples, respectively; ≤40 days from extraction to analysis)? If not, then J/UJ-flag sample results. If grossly (2x) exceeded, then flag J/R.	✓				
6. Were results for all project-specified target analytes reported?	✓				
7. Were project-specified Reporting Limits achieved for undiluted sample analyses?	✓				
8. Were samples with analyte concentrations exceeding the calibration range of the instrument re-analyzed at a higher dilution? If not, then J-flag sample result.			✓		
9. Was a method blank extracted with each batch (i.e., one per 20 samples, per batch, per matrix and per level)?	✓				
10. Were target analytes detected in the method blank?	✓			MB 660-134788/1-A: Phenanthrene @ 3.99 J µg/Kg (RL 8.0, MDL 3.9)	
11. Were target analytes detected in equipment/rinsate blanks?		✓		PAHs were not detected during the analysis of rinsate blank 021213-RB-Shovel (680-87747-31).	
12. Are equipment/rinsate blanks associated with every sample? If	✓			According to the QAPP, a rinsate blank is to be	

<sup>1</sup> Independent technical reviewer  
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## Data Validation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
no, note in DV report.				collected after each decontamination event, which occurs once per week per the client. A rinsate blank, 021213-RB-Shovel (680-87747-31) was collected during the week of 02/11/13. The rinsate blank was analyzed for PAHs under Test America Job ID 680-87747-2.	
13. Were analytes detected in samples below the blank contamination action level? If yes, U-flag positive sample results <5x associated blank concentration (10x for common blank contaminants – phthalates)		✓		Phenanthrene blank contamination action level (BCAL) is 19.95 µg/Kg (3.99 µg/Kg x 5) <sup>2</sup> . Sample-specific BCALs were developed by multiplying the BCAL by the sample dilution factor and dividing it by the percent solids (refer to <b>Attachment B</b> ). Qualification of data due to the presence of blank contamination is not warranted, as sample results were significantly greater than that observed in the blanks.	
14. Is a field duplicate associated with this Job?	✓			FM0161GGG-CS (680-87545-87) and FM0161GGG-CSD (680-87545-88)	
15. Was precision deemed acceptable as defined by the project plans?		✓		Refer to <b>Attachment B</b> (Field Duplicate Evaluation)	J
16. Were DFTPP ion abundance criteria (i.e., Table 3 of SW-846 8270C) met? If no, professional judgment may be applied to determine to what extent the data may be utilized.	✓			Alternate tuning criteria were used by the laboratory (i.e., EPA Method 525.2). All ion abundance criteria were met per EPA Method 525.2.	
17. Were samples analyzed within 12 hours of the DFTPP tune? If no, professional judgment may be applied to determine to what extent the data may be utilized.	✓				
18. Were initial and continuing calibration standards analyzed at the proper frequency for each instrument? <ul style="list-style-type: none"> <li>Ensure that a minimum of five standards are used for the initial calibration. If no, use professional judgment to determine the effect on the data and note in the reviewer narrative.</li> <li>An initial calibration is to be associated with each sample analysis.</li> <li>A continuing calibration standard is to be analyzed for every 12 hours of sample analysis per instrument.</li> </ul>	✓			<ul style="list-style-type: none"> <li>Initial Calibration: 02/22/2013, instrument BSMC5973</li> <li>ICV 02/22/2013 @ 14:06</li> <li>CCV 02/26/2013 @ 13:53</li> <li>Initial Calibration: 02/22/2013, instrument BSMD5973</li> <li>ICV: 02/22/2013 @ 14:51</li> <li>CCV 02/26/2013 @ 14:04</li> </ul>	

<sup>2</sup> BCAL developed based on the maximum amount observed in all blanks  
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## Data Validation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
19. Were calibration results within laboratory/project specifications? <ul style="list-style-type: none"> <li>ICAL (Criteria: <math>\leq 15</math> mean %RSD with individual CCC %RSD <math>\leq 30</math> (<math>\leq 50\%</math> for poor performers), OR <math>r \geq 0.995</math>, OR <math>r^2 \geq 0.99</math>, and RRF <math>\geq 0.050</math> (<math>\geq 0.010</math> for poor performers)):               <ul style="list-style-type: none"> <li>If %RSD <math>&gt; 15</math> (<math>&gt; 50\%</math> for poor performers), or <math>r &lt; 0.995</math>, or <math>r^2 &lt; 0.995</math>, then J-flag positive results and UJ-flag non-detects</li> <li>If mean RRF <math>&lt; 0.050</math> (<math>&lt; 0.010</math> for poor performers), then J-flag positive results and R-flag non-detects</li> </ul> </li> <li>ICV and CCV (Criteria: <math>\leq 20\% D</math> (<math>\leq 50\%</math> for poor performers) and RF <math>\geq 0.050</math> (<math>\geq 0.010</math> for poor performers)):               <ul style="list-style-type: none"> <li>If %D <math>&gt; 20</math> (<math>&gt; 50\%</math> for poor performers), then J-flag positive results and UJ-flag non-detects</li> <li>If RF <math>&lt; 0.050</math> (<math>&lt; 0.010</math> for poor performers), then UJ-flag non-detected semivolatile target compounds</li> </ul> </li> </ul>		✓		ICV of 02/22/2013 @ 14:06, instrument BSMC5973: <ul style="list-style-type: none"> <li>Chrysene @ -20.6%D (Lab: <math>\leq 35</math>, Project: <math>\leq 20</math>)</li> <li>Benzo(a)pyrene @ -21.7 %D (Lab: <math>\leq 35</math>, Project: <math>\leq 20</math>)</li> </ul> Positive bias is indicated by the above-mentioned CCV percent difference; therefore, J-flag result for chrysene and benzo(a)pyrene in associated samples <sup>3</sup> .	J
20. Was a LCS prepared for each batch and matrix?	✓				
21. Were LCS recoveries within lab control limits? If no, J-flag positive results when %R > Upper Control Limit (UCL) and J/R-flag results when %R < Lower Control Limit (LCL).	✓				
22. Were LCS/LCSD RPD within lab specifications? If no, J-flag positive results and UJ-flag non-detects			✓	LCS only	
23. Was a MS/MSD pair extracted at the proper frequency (one per 20 samples per batch)?	✓			<ul style="list-style-type: none"> <li>Prep Batch 134788: 680-87545-61 (Batch sample), MS/MSD. Lab sample 680-87545-A-61 is a project-specific sample (FM0161AQ-GS) that was selected by TestAmerica for the PAH MS and MSD analyses, and the results were reported under Job ID 680-87545-4.</li> <li>Prep Batch 134800: 680-87545-84 (FM0161DDD-CS), MS/MSD</li> </ul>	
24. Is the MS/MSD parent sample a project-specific sample?	✓			See above.	
25. Were MS/MSD recoveries within laboratory/project specifications? <i>Only QC results for project samples that are reported under this Job ID are evaluated.</i> <ul style="list-style-type: none"> <li>If the native sample concentration &gt; 4x spiking level, then an evaluation of interference is not possible.</li> <li>If either MS or MSD recovery meets control limits,</li> </ul>	✓				

<sup>3</sup> 680-87545- 84

## Data Validation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
qualification of data is not warranted. <ul style="list-style-type: none"> <li>MS and MSD %R&lt;10: J and R Flag positive and ND results, respectively</li> <li>MS and MSD %R &gt;10 and &lt;LCL: J-Flag positive and UJ-flag non-detect results</li> <li>MS and MSD R% &gt;UCL (or 140): J-Flag positive results</li> </ul>					
26. Were laboratory criteria met for precision during the MS/MSD analysis? <i>Only QC results for project samples that are reported under this Job ID are evaluated.</i> <ul style="list-style-type: none"> <li>If the native sample concentration &gt; 4x spiking level, then an evaluation of interference is not possible.</li> <li>If %RPD &gt; UCL, J-flag positive result and UJ-flag non-detect result</li> </ul>	✓				
27. Were surrogate recoveries within lab/project specifications? <ul style="list-style-type: none"> <li>If %R &lt;10, then J-flag positive and R-flag non-detect associated sample results</li> <li>If %R &gt;UCL, then J-flag positive results</li> <li>%R ≥10%, but &lt;LCL, then J-flag positive results and UJ-flag non-detect results</li> <li>If 1 %R &gt;UCL and 1 %R ≥10%, but &lt;LCL, then J-flag positive results and UJ-flag non-detect results</li> </ul>	✓				
28. Were internal standard (IS) results within lab/project specifications? <ul style="list-style-type: none"> <li>If IS area counts are less than 50% of the midpoint calibration standard, then J-flag positive and UJ-flag non-detect associated sample results</li> <li>If IS area counts are greater than 100% of the midpoint calibration standard, then J-flag positive results</li> <li>If extremely low area counts are reported or performance exhibits a major abrupt drop-off, then a severe loss of sensitivity is indicated, J-flag positive and R-flag non-detect results</li> <li>If retention time of sample's internal standard is not within 30 seconds of the associated calibration standard, R-flag associated data.</li> <li>The chromatographic profile for that sample must be examined to determine if any false positives or negatives exists. For shifts of large magnitude, the reviewer may</li> </ul>	✓				

**Data Validation Checklist (Continued)**

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
consider partial or total rejection of the data for that sample fraction. Positive results need not be qualified as R, if mass spectral criteria are met.					
29. Were lab comments included in report?	✓			Refer to <b>Attachment D</b> (Case Narrative)	
<b>Comments:</b> The data validation was conducted in accordance with the <i>Non-Industrial Use Property Sampling Event QAPP for the 35th Avenue Removal Site, Birmingham, Alabama, Revision 1</i> (OTIE, October 2012). The data review process was modeled after the <i>USEPA Contract Laboratory Program (CLP) National Functional Guidelines (NFG) for Organic Methods Data Review</i> (EPA, October 1999) and <i>USEPA CLP NFG for Low Concentration Organic Methods Data Review</i> (EPA, June 2001). Sample results have been qualified based on the results of the data review process ( <b>Attachment E</b> ). Criteria for acceptability of data were based upon available site information, analytical method requirements, guidance documents, and professional judgment.					

**DV Flag Definitions:**

- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- R The sample results are unusable. The analyte may or may not be present in the sample.
- U The analyte was analyzed for, but was not detected above the associated level; blank contamination may exist.
- UJ The analyte was not detected above the limit, and the limit is approximate and may be inaccurate or imprecise.

**ATTACHMENT A**  
**SAMPLE SUMMARY**

## Sample Summary

Client: Oneida Total Integrated Enterprises LLC  
Project/Site: 35th Avenue Superfund Site

TestAmerica Job ID: 680-87545-5  
SDG: 68087545-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-87545-84	FM0161DDD-CS	Solid	02/15/13 08:53	02/16/13 09:03
680-87545-85	FM0161EEE-CS	Solid	02/15/13 08:54	02/16/13 09:03
680-87545-86	FM0161FFF-CS	Solid	02/15/13 09:12	02/16/13 09:03
680-87545-87	FM0161GGG-CS	Solid	02/15/13 09:14	02/16/13 09:03
680-87545-88	FM0161GGG-CSD	Solid	02/15/13 09:17	02/16/13 09:03
680-87545-89	FM0161HHH-CS	Solid	02/15/13 09:24	02/16/13 09:03
680-87545-90	FM0161III-CS	Solid	02/15/13 09:29	02/16/13 09:03
680-87545-91	FM0161JJJ-CS	Solid	02/15/13 09:33	02/16/13 09:03

**ATTACHMENT B**

**SAMPLE-SPECIFIC BLANK CONTAMINATION ACTION LEVELS**



## Sample-Specific Blank Contamination Action Levels

## Attachment B

Sample ID:					FM0161EEE-CS	FM0161FFF-CS	FM0161GGG-CS	FM0161GGG-CSD	FM0161HHH-CS	FM0161III-CS	FM0161JJJ-CS
Lab ID:					680-87545-85	680-87545-86	680-87545-87	680-87545-88	680-87545-89	680-87545-90	680-87545-91
%S:					97.2	94.0	96.6	70.8	73.3	70.9	71.3
DF:					1	4	1	1	1	1	1
Parameter	RL, µg/kg	MB, µg/kg	Maximum Amount Detected <sup>1</sup> , µg/kg	Action Level <sup>2</sup> , µg/kg	Sample-Specific Blank Contamination Action Levels, µg/kg						
Phenanthrene	8.0	3.99	3.99	19.95	21	85	21	28	27	28	28
Reported Sample Result:					160	170	120	180	150	190	140
Reporting Limit, µg/kg:					8.1	34	8.2	11	11	11	11
Blank contamination action:					None <sup>3</sup>	None <sup>3</sup>	None <sup>3</sup>	None <sup>3</sup>	None <sup>3</sup>	None <sup>3</sup>	None <sup>3</sup>

MB - Method blank

RL - Reporting limit

<sup>1</sup> Maximum amount detected in among all blanks<sup>2</sup> Maximum amount detected in blanks multiplied by a factor of 10 for common blank contaminants (5 for all others)<sup>3</sup> Qualification of data is not warranted, because the sample concentration is greater than the sample-specific BCAL

**Action:** Sample results less than the sample-specific BCAL have been qualified due to the presence of blank contamination. The sample result has been U-flagged, and reporting limit elevated to the amount found in the sample.

**ATTACHMENT C**  
**FIELD DUPLICATE EVALUATION**

# Evaluation of Field Duplicate Results

# Attachment C

Analyte	FM0161GGG-CS (680-87545-87)	RL	FM0161GGG-CSD (680-87545-88)	RL	Unit	Avg. RLx5	RPD	Absolute difference	2x Avg RL	Action
Acenaphthylene	13	41	20	56	µg/kg	242.5	NA	7	97	None, absolute difference ≤ 2x Avg RL
Anthracene	23	8.6	34	12	µg/kg	51.5	NA	11	20.6	None, absolute difference ≤ 2x Avg RL
Benzo(a)anthracene	87	8.2	120	11	µg/kg	48	32	NA	NA	None, RPD ≤ 50%
Benzo(a)pyrene	80	11	110	15	µg/kg	65	32	NA	NA	None, RPD ≤ 50%
Benzo(b)fluoranthene	160	12	220	17	µg/kg	72.5	32	NA	NA	None, RPD ≤ 50%
Benzo(g,h,i)perylene	47	20	66	28	µg/kg	120	NA	19	48	None, absolute difference ≤ 2x Avg RL
Benzo(k)fluoranthene	48	8.2	75	11	µg/kg	48	NA	27	19.2	J/UJ-flag, absolute difference > 2x Avg RL
Chrysene	120	9.2	180	13	µg/kg	55.5	40	NA	NA	None, RPD ≤ 50%
Dibenzo(a,h)anthracene	18	20	26	28	µg/kg	120	NA	8	48	None, absolute difference ≤ 2x Avg RL
Fluoranthene	150	20	210	28	µg/kg	120	33	NA	NA	None, RPD ≤ 50%
Fluorene	9.0	20	13	28	µg/kg	120	NA	4	48	None, absolute difference ≤ 2x Avg RL
Indeno(1,2,3-cd)pyrene	45	20	62	28	µg/kg	120	NA	17	48	None, absolute difference ≤ 2x Avg RL
1-Methylnaphthalene	60	41	90	56	µg/kg	242.5	NA	30	97	None, absolute difference ≤ 2x Avg RL
2-Methylnaphthalene	78	41	120	56	µg/kg	242.5	NA	42	97	None, absolute difference ≤ 2x Avg RL
Naphthalene	85	41	130	56	µg/kg	242.5	NA	45	97	None, absolute difference ≤ 2x Avg RL
Phenanthrene	120	8.2	180	11	µg/kg	48	40	NA	NA	None, RPD ≤ 50%
Pyrene	110	20	160	28	µg/kg	120	NA	50	48	J/UJ-flag, absolute difference > 2x Avg RL

Note: If the analyte was not detected, then the cell was left blank.

µg/kg - micrograms per kilogram

J - Estimated value

NA - Not applicable

RL - Reporting limit

RPD - Relative percent difference

UJ - Not detected and the limit is estimated

Precision is based on either the absolute difference between sample results or RPD. If the sample results are less than or equal to 5x's the RL, then precision is based on the absolute difference between duplicate results. If sample results >5x's RL, then precision is evaluated using RPD. J-Flag sample results whenever the absolute difference is greater than the RL (2x for soils) or the RPD >20% (50% for soil). Table above presents the results for detected analytes only.

**ATTACHMENT D**  
**CASE NARRATIVE**

## Case Narrative

Client: Oneida Total Integrated Enterprises LLC  
Project/Site: 35th Avenue Superfund Site

TestAmerica Job ID: 680-87545-5  
SDG: 68087545-5

**Job ID: 680-87545-5**

**Laboratory: TestAmerica Savannah**

Narrative

### CASE NARRATIVE

**Client: Oneida Total Integrated Enterprises LLC**

**Project: 35th Avenue Superfund Site**

**Report Number: 680-87545-5**

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

#### RECEIPT

The samples were received on 02/16/2013; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.8° C and 3.4° C.

#### SEMIVOLATILE ORGANIC COMPOUNDS BY GCMS - LOW LEVEL

Samples FM0161DDD-CS (680-87545-84), FM0161EEE-CS (680-87545-85), FM0161FFF-CS (680-87545-86), FM0161GGG-CS (680-87545-87), FM0161GGG-CSD (680-87545-88), FM0161HHH-CS (680-87545-89), FM0161III-CS (680-87545-90) and FM0161JJJ-CS (680-87545-91) were analyzed for Semivolatile Organic Compounds by GCMS - Low Level in accordance with EPA SW-846 Method 8270C. The samples were prepared on 02/25/2013 and analyzed on 02/26/2013.

The method blank for preparation batch 134788 contained phenanthrene above the method detection limit (MDL), but below the reporting limit (RL). The daily instrument blank was clean. The associated samples contained detects for this analyte at concentrations greater than 10X the value found in the method blank; therefore, re-extraction and re-analysis of samples were not performed. Phenanthrene was detected in method blank MB 660-134788/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged. Refer to the QC report for details.

Sample FM0161FFF-CS (680-87545-86)[4X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Several analytes recovered outside the recovery criteria for the MS/MSD of sample 680-87545-61 in batch 660-134863.

No other difficulties were encountered during the Semivolatile Organic Compounds by GCMS - Low Level analyses.

All other quality control parameters were within the acceptance limits.

**ATTACHMENT E**  
**QUALIFIED SAMPLE RESULTS**

# Client Sample Results

Client: Oneida Total Integrated Enterprises LLC  
Project/Site: 35th Avenue Superfund Site

TestAmerica Job ID: 680-87545-5  
SDG: 68087545-5

Client Sample ID: FM0161DDD-CS

Lab Sample ID: 680-87545-84

Date Collected: 02/15/13 08:53

Matrix: Solid

Date Received: 02/16/13 09:03

Percent Solids: 96.5

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	100	U	100	21	ug/Kg	☆	02/25/13 10:02	02/26/13 15:06	1
Acenaphthylene	5.7	J	41	5.2	ug/Kg	☆	02/25/13 10:02	02/26/13 15:06	1
Anthracene	11		8.7	4.3	ug/Kg	☆	02/25/13 10:02	02/26/13 15:06	1
Benzo[a]anthracene	51		8.3	4.0	ug/Kg	☆	02/25/13 10:02	02/26/13 15:06	1
Benzo[a]pyrene	43	J	11	5.4	ug/Kg	☆	02/25/13 10:02	02/26/13 15:06	1
Benzo[b]fluoranthene	76		13	6.3	ug/Kg	☆	02/25/13 10:02	02/26/13 15:06	1
Benzo[g,h,i]perylene	35		21	4.5	ug/Kg	☆	02/25/13 10:02	02/26/13 15:06	1
Benzo[k]fluoranthene	26		8.3	3.7	ug/Kg	☆	02/25/13 10:02	02/26/13 15:06	1
Chrysene	67	J	9.3	4.6	ug/Kg	☆	02/25/13 10:02	02/26/13 15:06	1
Dibenz(a,h)anthracene	10	J	21	4.2	ug/Kg	☆	02/25/13 10:02	02/26/13 15:06	1
Fluoranthene	81		21	4.1	ug/Kg	☆	02/25/13 10:02	02/26/13 15:06	1
Fluorene	11	J	21	4.2	ug/Kg	☆	02/25/13 10:02	02/26/13 15:06	1
Indeno[1,2,3-cd]pyrene	29		21	7.3	ug/Kg	☆	02/25/13 10:02	02/26/13 15:06	1
1-Methylnaphthalene	40	J	41	4.5	ug/Kg	☆	02/25/13 10:02	02/26/13 15:06	1
2-Methylnaphthalene	47		41	7.3	ug/Kg	☆	02/25/13 10:02	02/26/13 15:06	1
Naphthalene	60		41	4.5	ug/Kg	☆	02/25/13 10:02	02/26/13 15:06	1
Phenanthrene	78		8.3	4.0	ug/Kg	☆	02/25/13 10:02	02/26/13 15:06	1
Pyrene	67		21	3.8	ug/Kg	☆	02/25/13 10:02	02/26/13 15:06	1
Surrogate	%Recovery	Qualifier	Limits						
o-Terphenyl	91		30 - 130						
							Prepared	Analyzed	Dil Fac
							02/25/13 10:02	02/26/13 15:06	1

Client Sample ID: FM0161EEE-CS

Lab Sample ID: 680-87545-85

Date Collected: 02/15/13 08:54

Matrix: Solid

Date Received: 02/16/13 09:03

Percent Solids: 97.2

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	100	U	100	20	ug/Kg	☆	02/25/13 06:16	02/26/13 21:38	1
Acenaphthylene	8.7	J	41	5.1	ug/Kg	☆	02/25/13 06:16	02/26/13 21:38	1
Anthracene	30		8.5	4.3	ug/Kg	☆	02/25/13 06:16	02/26/13 21:38	1
Benzo[a]anthracene	96		8.1	4.0	ug/Kg	☆	02/25/13 06:16	02/26/13 21:38	1
Benzo[a]pyrene	76		11	5.3	ug/Kg	☆	02/25/13 06:16	02/26/13 21:38	1
Benzo[b]fluoranthene	130		12	6.2	ug/Kg	☆	02/25/13 06:16	02/26/13 21:38	1
Benzo[g,h,i]perylene	41		20	4.5	ug/Kg	☆	02/25/13 06:16	02/26/13 21:38	1
Benzo[k]fluoranthene	46		8.1	3.7	ug/Kg	☆	02/25/13 06:16	02/26/13 21:38	1
Chrysene	110		9.2	4.6	ug/Kg	☆	02/25/13 06:16	02/26/13 21:38	1
Dibenz(a,h)anthracene	15	J	20	4.2	ug/Kg	☆	02/25/13 06:16	02/26/13 21:38	1
Fluoranthene	190		20	4.1	ug/Kg	☆	02/25/13 06:16	02/26/13 21:38	1
Fluorene	11	J	20	4.2	ug/Kg	☆	02/25/13 06:16	02/26/13 21:38	1
Indeno[1,2,3-cd]pyrene	42		20	7.2	ug/Kg	☆	02/25/13 06:16	02/26/13 21:38	1
1-Methylnaphthalene	40	J	41	4.5	ug/Kg	☆	02/25/13 06:16	02/26/13 21:38	1
2-Methylnaphthalene	49		41	7.2	ug/Kg	☆	02/25/13 06:16	02/26/13 21:38	1
Naphthalene	55		41	4.5	ug/Kg	☆	02/25/13 06:16	02/26/13 21:38	1
Phenanthrene	160	J	8.1	4.0	ug/Kg	☆	02/25/13 06:16	02/26/13 21:38	1
Pyrene	140		20	3.8	ug/Kg	☆	02/25/13 06:16	02/26/13 21:38	1
Surrogate	%Recovery	Qualifier	Limits						
o-Terphenyl	76		30 - 130						
							Prepared	Analyzed	Dil Fac
							02/25/13 06:16	02/26/13 21:38	1

TestAmerica Savannah

Sample results have been qualified by URS in accordance with the Non-Industrial Use Property Sampling Event QAPP for the 35th Avenue Removal Site, Birmingham, Alabama, Revision 1 (OTIE, October 2012)

# Client Sample Results

Client: Oneida Total Integrated Enterprises LLC  
Project/Site: 35th Avenue Superfund Site

TestAmerica Job ID: 680-87545-5  
SDG: 68087545-5

Client Sample ID: FM0161FFF-CS

Lab Sample ID: 680-87545-86

Date Collected: 02/15/13 09:12

Matrix: Solid

Date Received: 02/16/13 09:03

Percent Solids: 94.0

## Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	430	U	430	85	ug/Kg	☆	02/25/13 06:16	02/26/13 22:01	4
Acenaphthylene	170	U	170	21	ug/Kg	☆	02/25/13 06:16	02/26/13 22:01	4
Anthracene	30	J	36	18	ug/Kg	☆	02/25/13 06:16	02/26/13 22:01	4
Benzo[a]anthracene	110		34	17	ug/Kg	☆	02/25/13 06:16	02/26/13 22:01	4
Benzo[a]pyrene	91		44	22	ug/Kg	☆	02/25/13 06:16	02/26/13 22:01	4
Benzo[b]fluoranthene	180		52	26	ug/Kg	☆	02/25/13 06:16	02/26/13 22:01	4
Benzo[g,h,i]perylene	63	J	85	19	ug/Kg	☆	02/25/13 06:16	02/26/13 22:01	4
Benzo[k]fluoranthene	55		34	15	ug/Kg	☆	02/25/13 06:16	02/26/13 22:01	4
Chrysene	160		38	19	ug/Kg	☆	02/25/13 06:16	02/26/13 22:01	4
Dibenz(a,h)anthracene	22	J	85	17	ug/Kg	☆	02/25/13 06:16	02/26/13 22:01	4
Fluoranthene	170		85	17	ug/Kg	☆	02/25/13 06:16	02/26/13 22:01	4
Fluorene	85	U	85	17	ug/Kg	☆	02/25/13 06:16	02/26/13 22:01	4
Indeno[1,2,3-cd]pyrene	60	J	85	30	ug/Kg	☆	02/25/13 06:16	02/26/13 22:01	4
1-Methylnaphthalene	83	J	170	19	ug/Kg	☆	02/25/13 06:16	02/26/13 22:01	4
2-Methylnaphthalene	120	J	170	30	ug/Kg	☆	02/25/13 06:16	02/26/13 22:01	4
Naphthalene	110	J	170	19	ug/Kg	☆	02/25/13 06:16	02/26/13 22:01	4
Phenanthrene	170	B	34	17	ug/Kg	☆	02/25/13 06:16	02/26/13 22:01	4
Pyrene	130		85	16	ug/Kg	☆	02/25/13 06:16	02/26/13 22:01	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	122		30 - 130	02/25/13 06:16	02/26/13 22:01	4

Client Sample ID: FM0161GGG-CS

Lab Sample ID: 680-87545-87

Date Collected: 02/15/13 09:14

Matrix: Solid

Date Received: 02/16/13 09:03

Percent Solids: 96.6

## Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	100	U	100	20	ug/Kg	☆	02/25/13 06:16	02/26/13 22:24	1
Acenaphthylene	13	J	41	5.1	ug/Kg	☆	02/25/13 06:16	02/26/13 22:24	1
Anthracene	23		8.6	4.3	ug/Kg	☆	02/25/13 06:16	02/26/13 22:24	1
Benzo[a]anthracene	87		8.2	4.0	ug/Kg	☆	02/25/13 06:16	02/26/13 22:24	1
Benzo[a]pyrene	80		11	5.3	ug/Kg	☆	02/25/13 06:16	02/26/13 22:24	1
Benzo[b]fluoranthene	160		12	6.2	ug/Kg	☆	02/25/13 06:16	02/26/13 22:24	1
Benzo[g,h,i]perylene	47		20	4.5	ug/Kg	☆	02/25/13 06:16	02/26/13 22:24	1
Benzo[k]fluoranthene	48	J	8.2	3.7	ug/Kg	☆	02/25/13 06:16	02/26/13 22:24	1
Chrysene	120		9.2	4.6	ug/Kg	☆	02/25/13 06:16	02/26/13 22:24	1
Dibenz(a,h)anthracene	18	J	20	4.2	ug/Kg	☆	02/25/13 06:16	02/26/13 22:24	1
Fluoranthene	150		20	4.1	ug/Kg	☆	02/25/13 06:16	02/26/13 22:24	1
Fluorene	9.0	J	20	4.2	ug/Kg	☆	02/25/13 06:16	02/26/13 22:24	1
Indeno[1,2,3-cd]pyrene	45		20	7.3	ug/Kg	☆	02/25/13 06:16	02/26/13 22:24	1
1-Methylnaphthalene	60		41	4.5	ug/Kg	☆	02/25/13 06:16	02/26/13 22:24	1
2-Methylnaphthalene	78		41	7.3	ug/Kg	☆	02/25/13 06:16	02/26/13 22:24	1
Naphthalene	85		41	4.5	ug/Kg	☆	02/25/13 06:16	02/26/13 22:24	1
Phenanthrene	120	B	8.2	4.0	ug/Kg	☆	02/25/13 06:16	02/26/13 22:24	1
Pyrene	110	J	20	3.8	ug/Kg	☆	02/25/13 06:16	02/26/13 22:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	102		30 - 130	02/25/13 06:16	02/26/13 22:24	1

TestAmerica Savannah

Sample results have been qualified by URS in accordance with the Non-Industrial Use Property Sampling Event QAPP for the 35th Avenue Removal Site, Birmingham, Alabama, Revision 1 (OTIE, October 2012)



# Client Sample Results

Client: Oneida Total Integrated Enterprises LLC  
Project/Site: 35th Avenue Superfund Site

TestAmerica Job ID: 680-87545-5  
SDG: 68087545-5

Client Sample ID: FM0161GGG-CSD

Lab Sample ID: 680-87545-88

Date Collected: 02/15/13 09:17

Matrix: Solid

Date Received: 02/16/13 09:03

Percent Solids: 70.8

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	140	U	140	28	ug/Kg	☆	02/25/13 06:16	02/26/13 22:46	1
Acenaphthylene	20	J	56	7.0	ug/Kg	☆	02/25/13 06:16	02/26/13 22:46	1
Anthracene	34		12	5.9	ug/Kg	☆	02/25/13 06:16	02/26/13 22:46	1
Benzo[a]anthracene	120		11	5.4	ug/Kg	☆	02/25/13 06:16	02/26/13 22:46	1
Benzo[a]pyrene	110		15	7.3	ug/Kg	☆	02/25/13 06:16	02/26/13 22:46	1
Benzo[b]fluoranthene	220		17	8.5	ug/Kg	☆	02/25/13 06:16	02/26/13 22:46	1
Benzo[g,h,i]perylene	66		28	6.1	ug/Kg	☆	02/25/13 06:16	02/26/13 22:46	1
Benzo[k]fluoranthene	75	J	11	5.0	ug/Kg	☆	02/25/13 06:16	02/26/13 22:46	1
Chrysene	180		13	6.3	ug/Kg	☆	02/25/13 06:16	02/26/13 22:46	1
Dibenz(a,h)anthracene	26	J	28	5.7	ug/Kg	☆	02/25/13 06:16	02/26/13 22:46	1
Fluoranthene	210		28	5.6	ug/Kg	☆	02/25/13 06:16	02/26/13 22:46	1
Fluorene	13	J	28	5.7	ug/Kg	☆	02/25/13 06:16	02/26/13 22:46	1
Indeno[1,2,3-cd]pyrene	62		28	9.9	ug/Kg	☆	02/25/13 06:16	02/26/13 22:46	1
1-Methylnaphthalene	90		56	6.1	ug/Kg	☆	02/25/13 06:16	02/26/13 22:46	1
2-Methylnaphthalene	120		56	9.9	ug/Kg	☆	02/25/13 06:16	02/26/13 22:46	1
Naphthalene	130		56	6.1	ug/Kg	☆	02/25/13 06:16	02/26/13 22:46	1
Phenanthrene	180	B	11	5.4	ug/Kg	☆	02/25/13 06:16	02/26/13 22:46	1
Pyrene	160	J	28	5.2	ug/Kg	☆	02/25/13 06:16	02/26/13 22:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	108		30 - 130				02/25/13 06:16	02/26/13 22:46	1

Client Sample ID: FM0161HHH-CS

Lab Sample ID: 680-87545-89

Date Collected: 02/15/13 09:24

Matrix: Solid

Date Received: 02/16/13 09:03

Percent Solids: 73.3

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	140	U	140	27	ug/Kg	☆	02/25/13 06:16	02/26/13 23:09	1
Acenaphthylene	20	J	55	6.8	ug/Kg	☆	02/25/13 06:16	02/26/13 23:09	1
Anthracene	31		11	5.7	ug/Kg	☆	02/25/13 06:16	02/26/13 23:09	1
Benzo[a]anthracene	130		11	5.3	ug/Kg	☆	02/25/13 06:16	02/26/13 23:09	1
Benzo[a]pyrene	120		14	7.1	ug/Kg	☆	02/25/13 06:16	02/26/13 23:09	1
Benzo[b]fluoranthene	250		17	8.3	ug/Kg	☆	02/25/13 06:16	02/26/13 23:09	1
Benzo[g,h,i]perylene	72		27	6.0	ug/Kg	☆	02/25/13 06:16	02/26/13 23:09	1
Benzo[k]fluoranthene	67		11	4.9	ug/Kg	☆	02/25/13 06:16	02/26/13 23:09	1
Chrysene	170		12	6.2	ug/Kg	☆	02/25/13 06:16	02/26/13 23:09	1
Dibenz(a,h)anthracene	27		27	5.6	ug/Kg	☆	02/25/13 06:16	02/26/13 23:09	1
Fluoranthene	200		27	5.5	ug/Kg	☆	02/25/13 06:16	02/26/13 23:09	1
Fluorene	9.2	J	27	5.6	ug/Kg	☆	02/25/13 06:16	02/26/13 23:09	1
Indeno[1,2,3-cd]pyrene	66		27	9.7	ug/Kg	☆	02/25/13 06:16	02/26/13 23:09	1
1-Methylnaphthalene	67		55	6.0	ug/Kg	☆	02/25/13 06:16	02/26/13 23:09	1
2-Methylnaphthalene	81		55	9.7	ug/Kg	☆	02/25/13 06:16	02/26/13 23:09	1
Naphthalene	77		55	6.0	ug/Kg	☆	02/25/13 06:16	02/26/13 23:09	1
Phenanthrene	150	B	11	5.3	ug/Kg	☆	02/25/13 06:16	02/26/13 23:09	1
Pyrene	160		27	5.1	ug/Kg	☆	02/25/13 06:16	02/26/13 23:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	95		30 - 130				02/25/13 06:16	02/26/13 23:09	1

TestAmerica Savannah

Sample results have been qualified by URS in accordance with the Non-Industrial Use Property Sampling Event QAPP for the 35th Avenue Removal Site, Birmingham, Alabama, Revision 1 (OTIE, October 2012)

# Client Sample Results

Client: Oneida Total Integrated Enterprises LLC  
Project/Site: 35th Avenue Superfund Site

TestAmerica Job ID: 680-87545-5  
SDG: 68087545-5

Client Sample ID: FM0161III-CS

Lab Sample ID: 680-87545-90

Date Collected: 02/15/13 09:29

Matrix: Solid

Date Received: 02/16/13 09:03

Percent Solids: 70.9

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	140	U	140	28	ug/Kg	☆	02/25/13 06:16	02/26/13 23:31	1
Acenaphthylene	33	J	55	6.9	ug/Kg	☆	02/25/13 06:16	02/26/13 23:31	1
Anthracene	41		12	5.8	ug/Kg	☆	02/25/13 06:16	02/26/13 23:31	1
Benzo[a]anthracene	160		11	5.4	ug/Kg	☆	02/25/13 06:16	02/26/13 23:31	1
Benzo[a]pyrene	160		14	7.2	ug/Kg	☆	02/25/13 06:16	02/26/13 23:31	1
Benzo[b]fluoranthene	310		17	8.4	ug/Kg	☆	02/25/13 06:16	02/26/13 23:31	1
Benzo[g,h,i]perylene	85		28	6.1	ug/Kg	☆	02/25/13 06:16	02/26/13 23:31	1
Benzo[k]fluoranthene	93		11	5.0	ug/Kg	☆	02/25/13 06:16	02/26/13 23:31	1
Chrysene	220		12	6.2	ug/Kg	☆	02/25/13 06:16	02/26/13 23:31	1
Dibenz(a,h)anthracene	39		28	5.7	ug/Kg	☆	02/25/13 06:16	02/26/13 23:31	1
Fluoranthene	290		28	5.5	ug/Kg	☆	02/25/13 06:16	02/26/13 23:31	1
Fluorene	11	J	28	5.7	ug/Kg	☆	02/25/13 06:16	02/26/13 23:31	1
Indeno[1,2,3-cd]pyrene	85		28	9.8	ug/Kg	☆	02/25/13 06:16	02/26/13 23:31	1
1-Methylnaphthalene	70		55	6.1	ug/Kg	☆	02/25/13 06:16	02/26/13 23:31	1
2-Methylnaphthalene	86		55	9.8	ug/Kg	☆	02/25/13 06:16	02/26/13 23:31	1
Naphthalene	87		55	6.1	ug/Kg	☆	02/25/13 06:16	02/26/13 23:31	1
Phenanthrene	190	B	11	5.4	ug/Kg	☆	02/25/13 06:16	02/26/13 23:31	1
Pyrene	220		28	5.1	ug/Kg	☆	02/25/13 06:16	02/26/13 23:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	91		30 - 130				02/25/13 06:16	02/26/13 23:31	1

Client Sample ID: FM0161JJJ-CS

Lab Sample ID: 680-87545-91

Date Collected: 02/15/13 09:33

Matrix: Solid

Date Received: 02/16/13 09:03

Percent Solids: 71.3

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	140	U	140	28	ug/Kg	☆	02/25/13 06:16	02/26/13 23:54	1
Acenaphthylene	21	J	56	7.0	ug/Kg	☆	02/25/13 06:16	02/26/13 23:54	1
Anthracene	30		12	5.9	ug/Kg	☆	02/25/13 06:16	02/26/13 23:54	1
Benzo[a]anthracene	120		11	5.5	ug/Kg	☆	02/25/13 06:16	02/26/13 23:54	1
Benzo[a]pyrene	120		15	7.3	ug/Kg	☆	02/25/13 06:16	02/26/13 23:54	1
Benzo[b]fluoranthene	230		17	8.6	ug/Kg	☆	02/25/13 06:16	02/26/13 23:54	1
Benzo[g,h,i]perylene	62		28	6.2	ug/Kg	☆	02/25/13 06:16	02/26/13 23:54	1
Benzo[k]fluoranthene	67		11	5.1	ug/Kg	☆	02/25/13 06:16	02/26/13 23:54	1
Chrysene	160		13	6.3	ug/Kg	☆	02/25/13 06:16	02/26/13 23:54	1
Dibenz(a,h)anthracene	22	J	28	5.8	ug/Kg	☆	02/25/13 06:16	02/26/13 23:54	1
Fluoranthene	200		28	5.6	ug/Kg	☆	02/25/13 06:16	02/26/13 23:54	1
Fluorene	9.5	J	28	5.8	ug/Kg	☆	02/25/13 06:16	02/26/13 23:54	1
Indeno[1,2,3-cd]pyrene	56		28	10	ug/Kg	☆	02/25/13 06:16	02/26/13 23:54	1
1-Methylnaphthalene	69		56	6.2	ug/Kg	☆	02/25/13 06:16	02/26/13 23:54	1
2-Methylnaphthalene	90		56	10	ug/Kg	☆	02/25/13 06:16	02/26/13 23:54	1
Naphthalene	94		56	6.2	ug/Kg	☆	02/25/13 06:16	02/26/13 23:54	1
Phenanthrene	140	B	11	5.5	ug/Kg	☆	02/25/13 06:16	02/26/13 23:54	1
Pyrene	160		28	5.2	ug/Kg	☆	02/25/13 06:16	02/26/13 23:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	94		30 - 130				02/25/13 06:16	02/26/13 23:54	1

TestAmerica Savannah

Sample results have been qualified by URS in accordance with the Non-Industrial Use Property Sampling Event QAPP for the 35th Avenue Removal Site, Birmingham, Alabama, Revision 1 (OTIE, October 2012)